

DIRECT FOREIGN INVESTMENT, STRUCTURAL
ADJUSTMENT, AND INTERNATIONAL DIVISION
OF LABOR:
A DYNAMIC MACROECONOMIC THEORY OF
DIRECT FOREIGN INVESTMENT

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Abstract

The purpose of this paper is to examine the relationship between a country's comparative advantage and its outward direct foreign investment and the international division of labor between investing and host countries. The paper critically examines Professor Kiyoshi Kojima's macroeconomic theory of direct foreign investment—a pioneering work on the relationship between a country's comparative advantage—and its direct foreign investment. It is argued that although his insight is basically correct it needs to be reformulated into a dynamic framework. A reformulated “correspondence principle” is proposed, incorporating the decision of a firm with industry-specific capital but with the choice between investing it at home and abroad. The paper argues that outward direct foreign investment facilitates structural adjustment in the investing country by transferring abroad the industries in which the country is losing its comparative advantage.

I. *Introduction*

In recent years, with their large current account surpluses and high real exchange rates, Korea and Taiwan have started making direct foreign investment (DFI) in countries with the abundant supply of labor such as the ASEAN countries. What is interesting about these investments is that they are carried out by firms in labor-intensive industries on a relatively small scale and are thus different from U.S. DFI which is usually carried out by large enterprises in technologically advanced manufacturing and service industries as well as in natural resources. In fact, the pattern of DFI from Korea and Taiwan seems to parallel that of Japanese DFI in developing Asian countries in the second half of the 1960s and in the 1970s, which was then carried out by small and medium-sized firms in labor-intensive

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industries [Kojima (1973 and 1978)]. In other words, the Asian NIEs seem to be now replicating the investment experience of the Japan of the 60s and 70s while some of the ASEAN countries are now having a growth spurt similar to that the Asian NIEs went through in those years.

Direct foreign investment from Korea and Taiwan in ASEAN countries is a consequence of their having successfully industrialized in the past three decades. There are now clear signs that the comparative advantage of these countries is changing from labor-intensive to capital- and knowledge-intensive industries.¹ The outflows of DFI from these Asian NIEs, while they are going through changes in comparative advantage, thus raise an interesting question as to the relationship between a country's comparative advantage position and its foreign investment. Most of the past research on direct foreign investment has not addressed this macroeconomic issue, focusing rather on the microeconomic aspect of the investment decision of multinational enterprises,

The only exception perhaps is the work by Professor Kiyoshi Kojima whose pioneering theory on Japanese DFI deals explicitly with the relationship between comparative advantage and DFI [Kojima (1973 and 1978), Kojima and Ozawa (1984)]. In the light of recent increases in DFI from Korea and Taiwan it is thus worthwhile to re-examine Kojima's contribution and find out whether his insight and theory are applicable to the recent experiences of Korea and Taiwan. Although his theory is presented as uniquely Japanese, it may be of more general applicability if DFI from Korea and Taiwan is similar in character to that from Japan. In that case Kojima's theory and Japanese policies with respect to its DFI should have important policy implications for rapidly industrializing countries such as Korea, Taiwan, and some of the ASEAN countries.

In looking at the economic relations between Japan and the NIEs and between the NIEs and the ASEAN countries one is inevitably drawn to the hypothesis of the "flying-geese" pattern proposed by Professor Akamatsu (1961). This hypothesis, which is based primarily on the historical experience of Japan catching up with more advanced Western Europe, seems highly applicable to recent experiences of the NIEs [Yamazawa and Watanabe (1988)]. Instead of Japan following a leader, it is now the NIEs that are in the middle of the flying geese pattern. Completing the pattern is Japan at the leading edge, the ASEAN countries bringing up the end.

The Akamatsu hypothesis is a theory of industrialization of an open economy and consists of three sub-hypotheses. First, a developing country initially imports industrial goods, then produces them at home, and eventually exports them. Second, this sequence starts with "crude" goods and then moves up to "refined" goods. Third, the import of crude or consumer goods falls relative to domestic production while their export and domestic production increase but eventually decrease.

A key element in the flying-geese pattern hypothesis is that after some period of importing

¹ Rama (1988) carried out a study on comparative advantage shift from Japan to the NIEs and from NIEs and Japan to the ASEAN-4 countries. In the study he identified individual product categories in which hypothesized recipient countries gained comparative advantage and then correlated these gains with changes in revealed comparative advantage in the respective items in the hypothesized source countries. His evidence shows that during the 1965-73 period the shifts occurred primarily from Japan to Taiwan, the Philippines, and Thailand but during the 1973-84 period they occurred from Japan to Korea, the Philippines, and Taiwan. Shifts also occurred from Hong Kong to the Philippines and Thailand; Korea to Indonesia and Thailand; Taiwan to Indonesia and Thailand; and from Singapore to Thailand during the 1973-84 period.

industrial goods the developing country will establish import-substituting industries. This process occurs as it would be "impossible to restrain Western European capitalism from transplanting industries to the colonies in pursuit of large profits" and as "the industries and trade thus built by the foreign capital could not help giving birth to modern industries by national capital" [Akamatsu (p. 7)]. It is clear that Akamatsu saw the importance of foreign investment in the process of industrialization although he did not fully go into why the pursuit of larger profits would lead to the transplanting of industries and why indigenous industrialization would eventually take place.

The purpose of this paper is to examine the relationship between a country's comparative advantage and its DFI and thus the international division of labor between the investing and host countries. In so doing the paper will provide economic rationale for the transplanting of industries from developed to developing countries. It will also look into the role of DFI in structural adjustment in the investing country and its policy implications. Needless to say, this paper draws heavily on Kojima's theory of DFI and Akamatsu's theory of the industrialization of an open economy.

Section II presents a brief recapitulation of Kojima's macroeconomic theory of direct foreign investment along with its critique.² Section III then presents a dynamic macroeconomic theory of DFI, based on Kojima's insight into the relationship between comparative advantage and DFI and on Akamatsu's flying-geese pattern of development. Section IV concludes with policy implications of the dynamic theory.

II. *Kojima's Macroeconomic Theory of Direct Foreign Investment Revisited*

A key point in Kojima's theory is that Japanese DFI is complementary to Japan's comparative advantage position and thus trade-oriented whereas U.S. DFI displaces its comparative advantage position and is thus anti-trade oriented. Thus, a major portion of Japanese DFI is directed toward securing natural resources with which Japan is poorly endowed, and even Japanese DFI in manufacturing has been mostly in labor-intensive industries such as textiles and clothing, assembly of motor vehicles, and parts and components for electronic machinery. In contrast, U.S. DFI is carried out, according to Kojima, by large oligopolistic firms in the industries in which the United States has a comparative advantage.

Since a firm's decision to invest abroad or not is based on expected profits from investment, it must be shown, if there is to be a relationship between a country's DFI and its comparative advantage position, that a firm in a comparatively disadvantaged industry can make a higher rate of profit abroad than from an alternative investment project at home. To establish this relationship Kojima proposes a "correspondence principle," which states that a country's comparative profitability is higher in an industry in which it has a comparative advantage.

² It should be noted that Kojima's theory is based on his observation of the Japanese DFI in the 1960s and 1970s and thus with the structure of the Japanese economy of that period. There is some evidence that the Japanese DFI of more recent years differs from that of earlier years. Kojima's theory should be seen with this time-frame in mind.

Kojima's demonstration of his correspondence principle is as follows: Denote x_a and x_f as the rates of profit in the x industry at home and abroad, respectively, and y_a and y_f as the rate of profit in the y industry at home and abroad, respectively. Then, according to the correspondence principle, $x_f/y_f > x_a/y_a$ if the home country has a comparative advantage in the y industry. Accordingly, firms in the y industry will invest at home while those in the x industry will invest abroad. This correspondence principle suffers, however, from three major conceptual problems.

The first is that a firm's investment decision is not guided by comparative profitability as defined above but by a comparison of absolute profit rates. To see this point, suppose that $x_f=12\%$, $y_f=5\%$, and $x_a=y_a=10\%$, as in Kojima's example. [According to the correspondence principle, firms in the y industry will invest at home and those in the x industry will invest abroad. The fallacy of this argument can be, however, easily demonstrated if we assume that $x_f=6\%$, $y_f=2.5\%$, and $x_a=y_a=10\%$. Here, we have the same comparative profitability as in Kojima's case but firms in neither industry will invest abroad as they can get a higher absolute profit rate at home.

The second problem with the correspondence principle is that it is formulated in terms of static comparative advantage and disadvantage. The pretrade difference in cost in the theory of comparative advantage refers to a difference in static equilibrium, and consequently the profit rate is the same for all industries whether they are comparatively advantaged or disadvantaged. In other words, $x_f/y_f = x_a/y_a$ when both countries are in static pre-trade equilibrium, and this relationship will hold whether the home country has a comparative advantage in the x or y industry. The profit rate may, however, differ between countries and consequently there may be capital movement from one country to the other. But, being the same across all industries within each country the profit rate cannot be a determinant of which industry will be investing at home or abroad.

The third problem with the correspondence principle is that it is a symmetric relationship between a pair of countries. Since the relationship between the two is specified only in terms of comparative advantage and comparative profitability with no reference to absolute profit rates, it follows that the flow of DFI is bilateral. One country's comparatively disadvantaged industry with a comparatively low profit rate is the other country's comparatively advantaged industry with a comparatively high profit rate, and conversely. Consequently, if one country's outward DFI is from its comparatively disadvantaged industry, it receives at the same time DFI in its comparatively advantaged industry from the other country's comparatively disadvantaged industry.

Clearly, whether this happens or not will depend on absolute profit rates. Thus, in the numerical example given by Kojima ($x_f=12\%$, $y_f=5\%$, $x_a=y_a=10\%$), firms in the home country's x industry would invest in the foreign country's x industry earning 12% instead of 10% while firms in the foreign country's y industry would invest in the home country's y industry earning 10% instead of 5%. This certainly was not the case for Japan which invested in developing Asian countries but did not receive DFI from them in its capital- and knowledge-intensive industries in return. Furthermore, one must wonder why every firm, in whichever industry it is currently, would not want to invest in the foreign country's x industry which has the highest profit rate. Also, as demonstrated above, one could easily select a set of profit rates which would lead DFI in only one direction.

Even though the preceding discussion demonstrates that the correspondence principle

has serious problems, empirical evidence shows that Kojima's observation of the patterns of Japanese and U.S. DFI is by and large correct [e.g., Lee (1980)]. Furthermore, in the light of recent outflows of DFI from Korea and Taiwan we believe that his valuable insight into the difference between Japanese and U.S. DFI and his macroeconomic theory of DFI can be a fruitful starting point for further research in the relationship between DFI and comparative advantage.

III. *A Dynamic Macroeconomic Theory of Direct Foreign Investment*

Changing Comparative Advantage

The preceding discussion of Kojima's macroeconomic theory of direct foreign investment suggests that it needs to be formulated in a dynamic, disequilibrium framework. Profit or expected profit rates can be then different between industries, and furthermore it can be assumed that firms in an industry *losing* comparative advantage experience a low or falling profit rate whereas those in an industry *gaining* comparative advantage experience a high or rising profit rate.³ Then, the correspondence is between absolute profit rates and *changing* comparative advantage, and firms in the industry losing comparative advantage invest abroad whereas those in the industry gaining comparative advantage invest at home. The theory must be formulated, however, in a three-country world to avoid the problem of symmetry mentioned above.

In such a world there are three countries that form a flying-geese pattern: a developed country, a developing country, and a country in transition (transition country) from the developing to the developed status. This country is undergoing a structural change from a manufacturer of primarily labor-intensive products to a manufacturer of capital- and knowledge-intensive products. Thus, it is losing comparative advantage in labor-intensive industries while gaining comparative advantage in capital- and knowledge-intensive industries.

This reformulated correspondence principle then states that firms in labor-intensive industries which are losing comparative advantage in the transition country will invest in the developing country as they experience falling or low profit rates at home whereas those in capital- and knowledge-intensive industries which are gaining comparative advantage will invest at home as they experience rising or high profit rates. The latter industries will also receive DFI from the developed country which is in turn losing comparative advantage in some of its capital- and technology-intensive industries. The developing country is of course gaining comparative advantage in the labor-intensive industries in which the transition country is now investing.

Industry-Specific Capital and an Internal Capital Market

The reformulated correspondence principle does not, however, explain why firms in

³ There may not be any firm yet in the industry gaining a comparative advantage, but the expected profit rate there would be high to attract new firms.

an industry losing comparative advantage would invest abroad instead of moving into a domestic industry in which the country is gaining comparative advantage and where there is a high or rising profit rate. If the profit rate is all that matters to a firm's decision to invest abroad or at home, then the correspondence principle, even as reformulated, has little to say about the direction of investment.

What are then the factors besides the profit rate that a firm considers in deciding either to invest abroad or to move into another industry at home? Implicit in the correspondence principle is the assumption that the value of capital does not change whether it is invested at home or abroad. But it cannot be so if some of the capital is industry-specific, and the firm will thus consider, besides the profit rate, the effect of its decision on the value of capital.

If it decides to invest abroad, the firm can produce and market the same product, utilizing its present industry- and firm-specific intangible capital and some industry-specific physical capital transferred from the home country. If it decides to move into another industry at home, the firm will have only its general capital to work with, its industry-specific intangible and physical capital being of no use in that industry.⁴ That is, because of the industry-specificity of some of the capital that the firm owns there can be an important difference in the value of capital between investing abroad—*inter-country intra-industry movement* of intangible and tangible capital—and moving into another industry at home—*intra-country inter-industry movement*. In the first case the value of the firm's total capital will change little whereas in the second case the value of the capital will diminish by the value of its industry-specific capital.⁵ This loss in value is due to the fact that industry-specific capital has little or no value in other than its own industry, and it could be regarded as the cost of intra-country inter-industry movement. Thus, other things being equal the firm will be inclined to invest abroad instead of at home.

An example of industry-specific intangible capital is marketing knowhow. Whether the market for the product is in the investing country or in a third country, the firm investing abroad will be utilizing already established marketing channels and will thus save on the cost of finding new markets and new marketing channels which would be necessary if it moved into another industry at home.

In investing abroad there is the cost of moving capital to a foreign country and the cost of doing business in an alien setting. In making its decision to invest abroad or at home the firm will thus compare these costs with the cost of intra-country inter-industry movement. The modern systems of telecommunications and transportation have reduced, however, the cost of investing abroad. This must be more so especially when DFI is, for instance, from Japan to countries such as Korea and Taiwan, which are geographically close to Japan and which were once colonies of Japan. Thus, when Japan was losing its comparative advantage in labor-intensive industries, even small and medium-sized firms in these industries would have found it advantageous to invest abroad instead of establishing themselves in another industry at home.

⁴ It is assumed here that industry-specific intangible capital and general intangible capital are not separable. If separable, the firm does not have to make the either-or choice between investing abroad and moving into another industry at home. It can do both, taking industry-specific capital abroad while taking general capital to another industry at home.

⁵ This is not quite accurate as the value of capital would depend on the future stream of profits, and this would change whether the firm invests abroad or at home.

So far we have compared only two alternative courses of action for the firm in an industry in which a country is losing comparative advantage—investing abroad or moving into another industry at home. There is, however, a third alternative—that of selling industry-specific intangible and tangible capital to foreign firms. Because of high transactions costs markets are not, however, well developed for such capital. In fact, a firm invests abroad and becomes a multinational enterprise in order to economize on transactions costs of utilizing its firm-specific intangible capital [Rugman (1980)]. Foreign investment thus allows the firm to maximize the value of both industry-specific intangible and tangible capital by reducing transactions costs as well as by providing an alternative location for the capital.

It should be noted here that whether it invests abroad or in another industry at home the firm is carrying out internal transactions. In other words they are transactions within the firm's internal capital market, and as such these decisions are subject to the same cost-benefit calculus of the firm. However, as the internal capital market would generally allocate new (putty) as well as existing capital (clay), we may observe both diversification and investment abroad at the same time instead of only one or the other. In fact, such a pattern has been observed in the case of Japan [Hara (1990)].

There is nothing in the preceding analysis that is uniquely Japanese. Furthermore, although the focus of the analysis is on the transition country, it could be easily applied to the developed country which is also facing a change in its comparative advantage position. As the transition country gains comparative advantage in certain capital- and knowledge-intensive industries, the developed country is losing its comparative advantage in the same industries. There is then no reason why firms in the latter industries would not find it advantageous to invest in the transition country for the reasons mentioned above. Clearly, some of U.S. DFI fits this category although there are others that do not.

Adjustments to changing comparative advantage do not have to be made only by transferring an entire industry. They may be carried out instead through the "intra-firm division of labor" by multinational enterprises across national boundaries [Kojima and Nakauchi (1988)]. A production processes can be internationalized by transferring abroad certain segments of it while keeping the remainder at home. Such internationalization of production processes can reduce the cost of production as it allows the firm to take advantage of international differences in factor prices. Lipsey (1989) has pointed out that in the case of the United States what is being transferred abroad is the production of more labor-intensive and lower-tech segments of the high-tech industries while the higher-tech segments are being retained in the country. As evidence of this process Lipsey found that during the 1970–86 period U.S. exports were at a higher technology level than U.S. imports but both exports and imports moved toward higher technology classes over the period. He also found that U.S. exports and imports embody an increasing amount of R & D although the former embody considerably more than the latter.

Labor-Market Conditions

So far the labor market was assumed to be competitive such that workers could be easily hired and laid off. Consequently, only the effect of the decision either to invest abroad or to invest at home on the value of industry-specific capital was considered. But, clearly such labor-market conditions cannot be assumed for all countries. Being largely immobile

between countries, labor cannot preserve the value of its industry-specific skills by moving abroad and has therefore a greater incentive to protect it through other measures. The labor union is certainly one of these, but government regulations restricting immediate layoffs are also a part of protective measures for labor. Such regulations impose an additional cost to inter-country intra-industry movement, which the firm will consider in deciding whether to invest abroad or at home.

If the firm makes intra-country inter-industry movement, it may not have to bear the layoff cost especially if the skills of the currently employed workers are not industry-specific. Even if they are industry-specific the workers may be still employed in the new industry. This can happen as, although their marginal product of labor in the new industry may be less than the wage rate, the cost of wage overpayment could be less than the layoff cost. In any case, because of the layoff cost the balance of advantage for the firm may shift to intra-country inter-industry movement.

If workers' skills are predominantly firm- (and industry-) specific, the firms and workers would have a common interest in forming a "distributional coalition" and lobbying the government to protect the industry from foreign competition. When skills are firm-specific, the firm incurs a part of the training cost by paying wages exceeding the marginal product of labor during the training period but pays wages lower than the marginal product afterwards [Becker (1975)]. The firm would thus suffer a loss if it is to lay off workers after the training by moving abroad or into another industry at home. Clearly, both the firms and workers would gain by staying in the industry if it can be protected from foreign competition.

Such a distributional coalition is more likely to develop in an industry which has existed for some time and is geographically concentrated but which is now losing comparative advantage than in a new industry gaining comparative advantage [Olson (1982)]. Besides a low or falling profit rate the firms and workers in the former would tend to have more industry- and firm-specific capital and skills than those in the latter and thus more to gain from protection from foreign competition.

In the case of the Japan of the late 1960s and early 1970s there was a shortage of labor in unskilled labor-intensive industries and unemployment was not an issue for either labor unions or the government. There was therefore no need to protect the workers in these industries and labor-market conditions could not have been a hindrance to investment abroad. In contrast, different labor-market conditions in the U.S. could have made laying-off costly, thus hindering foreign investment. In explaining the difference between U.S. and Japanese investment it is, therefore, important to look into the difference in labor-market conditions between the two countries.

Another aspect to consider in the case of Japan is the role that internal labor markets play when firms are investing abroad and diversifying at the same time. Investing abroad releases labor from its current employment while diversification requires the employment of labor with different human capital. But, as Japanese workers tend to be trained as firm-specific generalists they could be easily transferred from one line of production to another.

Because U.S. DFI is not by and large from industries losing comparative advantage it has been taken for granted that there is no motive for firms in these industries to invest abroad. That is why most of the analysis of U.S. DFI regards it as something carried out only by oligopolistic firms possessing firm-specific intangible capital [e.g., Caves (1971),

Hymer (1960), and Kindleberger (1969)]. There is, however, no reason why monopolistically competitive firms would not possess some firm-specific intangible capital [Lee (1984)]. Since firms compare the costs and benefits in making the decision to invest abroad and since non-wage costs such as the layoff cost affect this decision, firms even in non-oligopolistic markets may invest abroad if the cost of investing abroad is sufficiently low. Thus, the fact that under the present labor-market conditions U.S. DFI is largely by oligopolistic firms should not be taken to mean that under alternative labor-market conditions it would not be carried out by firms in non-oligopolistic markets.

The theory of DFI proposed in this paper is not inconsistent with other theories of DFI such as the internalization theory. In these theories firm-specific intangible capital and the internalization of its use are the key reasons for investing abroad. Being micro-economic in approach, however, they focus only on the firm-specificity of capital, ignoring its industry-specificity and thus the possibility and the cost of investing in another industry. Consequently, these theories fail to consider another very important reason for investing abroad—that of retaining the value of industry-specific capital by remaining in the same industry but in a foreign country. The present theory fills this gap.

So far it is assumed that a change in comparative advantage is exogenous with DFI responding to it. But it is obvious that DFI itself is a cause for further changes as it helps the host country to realize its latent comparative advantage. By bringing about a change in the industrial structure of the host country and thus its trade pattern DFI affects the economy of the home country. This is the so-called “boomerange effect,” which may in turn accelerate DFI out of the home country. This sequential relationship between DFI and comparative advantage within the flying-geese pattern is an issue that needs to be further investigated.⁶

IV. *Conclusion*

A country's comparative advantage changes over time as technologies change and factors of production accumulate at different speeds and as the world prices of traded goods change. If capital and skills are fully depreciated at the normal rate of return at the time when a change occurs in the country's comparative advantage, there is no loss in the value of capital and the value of skills and there will be no structural adjustment problem. Since this is unlikely, a change in comparative advantage imposes a private as well as social cost as it affects the value of industry-specific capital and skills. Foreign investment makes it possible for the affected firms to maintain the value of the capital, thus facilitating the contraction of industries losing comparative advantage at a lesser cost than if foreign investment is not possible. Since in the latter case structural adjustment will cost the country the industry-specific capital, it follows that the country gains from foreign investment by avoiding this loss.

⁶ The interactive relationship between developed and developing countries was described by Akamatsu in terms of the “homogenization” of developing countries and the “heterogenization” by developed countries. (Homogenization means the economic structure of a developing country becoming similar to that of a developed country, whereas heterogenization means the economic structure of a developed country becoming differentiated from that of a developing country.) For the relative position inside the flying-geese pattern to remain stable these two processes must proceed at the same speed.

In comparison with capital, labor is not generally mobile between countries and cannot thus avoid the loss in the value of industry-specific skills. Consequently, the response of labor in an industry losing comparative advantage is different from that of the firm. It is generally seen by labor groups that DFI displaces workers in the home country and is the cause of their unemployment. What our analysis demonstrates is that the loss of comparative advantage in labor-intensive industries, and not DFI, is the cause of labor displacement. DFI is an action taken to avoid the effect of that loss in comparative advantage, and as such it makes the owners of capital better off and workers no worse off (unless DFI induces a deterioration in the terms of trade) than if DFI is not allowed.

If workers' skills are entirely general and if the labor market functions competitively, workers cannot be worse off with DFI. Whether the firms invest abroad or at home, the domestic stock of capital will be reduced by the amount of industry-specific capital and consequently the marginal product of labor and GDP will be the same in both cases. However, as industry-specific capital transferred abroad remains productive its repatriated earnings will be added to GDP, making GNP larger than GDP. If DFI is not allowed, GNP will be the same as GDP.

If workers have some industry-specific skills, again they would be no worse off with DFI. Since they are not mobile between countries, their industry-specific skills will be lost whether firms invest abroad or not. To the extent that the skills have no value now GDP is less than the GDP when skills are general. With DFI the country's GNP will be still larger than GDP.

With institutions such as the Japan Overseas Development Corporation, the Overseas Mineral Resource Development Corporation, and the Overseas Fishery Cooperative Foundation the Japanese government promoted foreign investment by small and medium-sized firms in the industries losing comparative advantage. This raises the question of whether such implicit subsidies were socially optimal as in their absence resources could have moved into other industries. Although such a move would have reduced the value of industry-specific capital, firms would have done so only if doing so was more profitable than investing abroad.

A case for subsidies can be made if firms know less about investment opportunities abroad than at home. With respect to proprietary information there is, however, no reason why there would be any difference between investing abroad and investing at home. But with respect to general information regarding the economic and political conditions of a foreign country, which takes on the characteristic of a public good, one could argue that it is better for a public agency to collect and disseminate the information than for private firms to do it individually.

If there are distortions in the labor market as in the case of the layoff cost, a second-best policy may be subsidizing foreign investment. The layoff cost increases the cost of inter-country intra-industry movement and subsidies can be used to offset this cost. Workers will be then laid off and receive the layoff payment which the firm pays with subsidies from the government. Now the country's GNP will exceed its GDP provided the subsidies do not introduce other distortions in the economy. Of course, a better policy would be to subsidize directly the workers to move into other industries and eliminate the layoff cost.

For the host country DFI helps the development of new industries in which it is gaining comparative advantage by bringing into the country intangible and tangible capital from

the more developed country. The host country will be helped to realize its latent comparative advantage in these industries as DFI brings in individuals embodying intangible capital.⁷ So occurs the transplanting of industries from developed to developing countries, as hypothesized by Akamatsu.

Clearly, for DFI to facilitate structural adjustment in the home country and to help develop new industries in the host country it must be allowed to move between them with as few restrictions as possible. Such DFI must be accompanied, however, by a liberal trade regime to accommodate resulting changes in the pattern of trade. Thus, an argument for a liberal investment regime is concomitant to that for a liberal trade regime.⁸

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⁷ There is much evidence now on the importance for the diffusion of technology through the movements of individuals from firm to firm and from country to country. See Pack (1987) for a case study in textiles.

⁸ Yamazawa and Watanabe (1988) argue that Japan should not fear a boomerang effect and should take positive steps toward technology transfer to its Asian neighbors. They recommend trade liberalization and flexible policies toward multinational enterprises.

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